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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte FRANK MILLER and HART ALBRODT

Appeal 2009-010385
Application 10/534,194
Technology Center 3700

Before JENNIFER D. BAHR, LINDA E. HORNER, and
JOHN C. KERINS, *Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL¹

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

STATEMENT OF THE CASE

Frank Miller and Hart Albrodt (Appellants) seek our review under 35 U.S.C. § 134 of the Examiner's decision rejecting claims 19-26 and 28-41, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We AFFIRM.

THE INVENTION

Appellants' claimed invention is a dosing device for making fuel or other substances available in a finely atomized fashion to a reformer in a fuel-cell-assisted transport system. Spec. 1:2-20.² Claim 19, reproduced below, is representative of the subject matter on appeal.

19. A dosing device for a liquid fuel, comprising:

at least one metering device adapted to meter fuel into a metering conduit;

a nozzle body adjoining the metering conduit, the nozzle body including at least one spray discharge opening that opens into a metering chamber, the nozzle body including a downstream support element having a swirl insert arranged on a spray-discharge side, the at least one spray discharge opening arranged in the swirl insert,

wherein the swirl insert includes at least one seat element having the at least one spray discharge opening and a swirl element arranged upstream from the seat element.

² All references to "Spec." in the opinion refer to the Substitute Specification filed by Appellants on May 6, 2005.

THE REJECTIONS

Appellants seek review of the following rejections:

1. The Examiner rejected claims 19, 20, 28-30, 32, 33, 35, 36, and 39 under 35 U.S.C. § 102(b) as being anticipated by Saikalis (US 5,409,169; issued April 25, 1995).
2. The Examiner rejected claims 21-26, 31, 34, 37, 38, 40 and 41 under 35 U.S.C. § 103(a) as being unpatentable over Saikalis.

CONTENTIONS AND ISSUE

Appellants argue claims 19, 20, 28-30, 32, 33, 35, 36, and 39 as a single group. App. Br. 4. We select claim 19 as representative, and claims 20, 28-30, 32, 33, 35, 36, and 39 stand or fall with claim 19. *See* 37 C.F.R. § 41.37(c)(1)(vii). Appellants rely on the same arguments presented for patentability of claim 19 over Saikalis to argue against the rejection of claims 21-26, 31, 34, 37, 38, 40, and 41 under 35 U.S.C. § 103(a) as being unpatentable over Saikalis. App. Br. 5. As such, this case turns on the patentability of claim 19.

The Examiner found Saikalis anticipates claim 19 because it discloses a swirl insert (fuel swirl plate A combined with air swirl plate B) including a seat element (the portion of air swirl plate B on which swirl element A sits) having the spray discharge opening and a swirl element (disposed within fuel swirl plate A) arranged upstream from the seat element. Ans. 3-6.

Appellants contend that “seat element” would be understood by one having ordinary skill in the art to mean a “valve seat” and that because Saikalis discloses the valve seat in the fuel swirl plate A, Saikalis does not

disclose a swirl insert including “at least one seat element having the at least one spray discharge opening and a swirl element arranged upstream from the seat element” as called for in claim 19. App. Br. 3-4.

The issue presented by this appeal is whether Saikalis’s air swirl plate B, located downstream of the fuel swirl plate A, includes a “seat element” as called for in claim 19.

FINDINGS OF FACT

We find that the following enumerated findings are supported by at least a preponderance of the evidence.

1. Appellants’ Specification describes generally:
 - a. “The swirl insert may have at least one seat element having a spray discharge opening, and a swirl element.” Spec. 4:25-26.
 - b. “[T]he swirl element may be joined to the seat element by welding, laser welding, etc.” Spec. 5:1-2.
 - c. “It may be possible to dispose an intermediate element between the swirl element and the seat element. The swirl element may thereby be spaced away from the seat element so as to influence the swirl properties.” Spec. 5:5-8.
2. Appellants’ Specification describes a first embodiment of nozzle body 7 having a swirl insert 24 comprised of swirl element 16, intermediate element 22, and seat element 4, as follows:
 - a. “Nozzle body 7 has, in its spray-discharge end facing away from metering conduit 8, a swirl insert 24 that is illustrated in

Figure 2 and has at least one spray discharge opening 14.”

Spec. 8:31-33; fig. 2.

- b. Swirl insert 24, located in the lower, downstream end of support element 15, includes a seat element 4 having spray discharge opening 14 disposed centeredly therein and a swirl element 16 having swirl conduits 12 and a centeredly disposed opening 25. Seat element 4 and swirl element 16 are each arranged in a disk shape. The downstream-facing disk underside of swirl element 16, and the upstream-facing upper disk side of seat element 4, rest against each other via an intermediate element 22 and are joined to one another with a fourth weld seam 21 that is produced by a laser welding method. Intermediate element 22 spaces seat element 4 and swirl element 16 apart.

Spec. 10:9-19.

- c. A peg-shaped or cylindrical insert 28 engages through opening 25 of swirl element 16 and closes off opening 25. The downstream end of insert 28 does not, however, rest against seat element 4. ... Insert 28 is mounted in hydraulically sealed fashion on swirl element 16, along its outer circumference against the upper disk side of swirl element 16, by a third weld seam 20.

Spec. 10:25-34.

- d. “Swirl insert 24 is mounted in hydraulically sealed fashion on seat element 4 on support element 15 by a second weld seam 19” Spec. 11:1-2.

- 3. Appellants’ Specification describes a second embodiment of nozzle body 7 similar to the first embodiment, but in the second embodiment, intermediate element 22 is absent and replaced by a

- recess 29, so that swirl element 16 rests on a ring 30 created on the upper disk side of seat element 4. Spec. 11:21-33; fig. 4.
4. Appellants' Specification describes a third embodiment of nozzle body 7 similar to the second embodiment, but in the third embodiment, insert 28 is absent so that the fuel or fuel/gas mixture may flow through opening 25 and swirl conduits 12 to spray discharge openings 14. Spec 12:1-7; fig. 5.
 5. Saikalis discloses a fuel injector having "a fuel swirl plate A and an air swirl plate B disposed successively along the fuel flow path at the nozzle end of the injector." Saikalis, col. 10, ll. 50-53, fig. 8.
 6. Fuel swirl plate A has a valve seat that comes into contact with a ball valve at one end of an injector plunger 104 to meter the fuel that passes through fuel swirl plate A and that is swirled by the fuel swirl plate A. Saikalis, col. 10, ll. 53-57; fig. 8.
 7. The fuel swirled by fuel swirl plate A then passes into a chamber formed in the air swirl plate B where it is subjected to a rotating stream of compressed air, which causes the fuel to be broken up into fine particles, which are then ejected through the nozzle portion of the injector (port 115) as a fine spray. Saikalis, col. 10, ll. 58-66; col. 11, l. 65-col. 12, l. 2; fig. 8.
 8. Figure 11 of Saikalis is a cross-sectional view of the nozzle end of an electromagnetic fuel injector employing a fuel swirl plate and air swirl plate according to Saikalis's invention. Saikalis, col. 4, ll. 46-49; fig. 11.

9. Figure 11 of Saikalis shows the downstream-facing underside of fuel swirl plate A resting against the upstream-facing upper side of air swirl plate B. Saikalis, fig. 11.

PRINCIPLES OF LAW

“Both anticipation under § 102 and obviousness under § 103 are two-step inquiries. The first step in both analyses is a proper construction of the claims. . . . The second step in the analyses requires a comparison of the properly construed claim to the prior art.” *Medichem, S.A. v. Rolabo, S.L.*, 353 F.3d 928, 933 (Fed. Cir. 2003) (internal citations omitted).

We determine the scope of the claims in patent applications not solely on the basis of the claim language, but upon giving claims “their broadest reasonable interpretation consistent with the specification” and “in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (citations omitted). It is the appellants’ burden to precisely define the invention, not the PTO’s. *In re Morris*, 127 F.3d 1048, 1056 (Fed. Cir. 1997). Appellants always have the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05 (CCPA 1969). *See In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (“Absent claim language carrying a narrow meaning, the PTO should only limit the claim based on the specification or prosecution history when those sources expressly disclaim the broader definition.” (citation omitted)).

ANALYSIS

Claim Construction

The Examiner interpreted the claimed “seat element” to encompass one part in contact with another part. Ans. 6. Appellants contend that “one of ordinary skill in the art would understand a seat element to include a valve seat.” App. Br. 4. Appellants have not submitted objective evidence in support of this argument. “Attorney’s argument in a brief cannot take the place of evidence.” *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974) (citation omitted).

Appellants’ definition of “seat element” is not supported by Appellants’ Specification. Appellants’ Specification does not provide a lexicographical definition of “seat element.” Further, Appellants’ Specification describes the seat element as being an element having a spray discharge opening and having an upstream-facing upper disk side against which a downstream-facing disk underside of swirl element 16 rests either directly or via an intermediate element 22 (Facts 1-4). Seat element 4 also rests against support element 15 (Fact 2.d.). While the seat element 4 of Figures 2 and 4 may appear to include a valve seat against which insert 28 rests, Appellants’ Specification explicitly describes that the downstream end of insert 28 does not rest against seat element 4, and that insert 28 is mounted on swirl element 16 (Fact 2.c.). In fact, Appellants’ Specification discloses a third embodiment in which the insert 28 is absent, and thus seat element 4 of the third embodiment clearly does not include a valve seat (Fact 4). Thus, the seat element 4 described in Appellants’ Specification

appears to seat against either intermediate element 22 or directly against swirl element 16 and also to seat against support element 15. This disclosure in Appellants' Specification supports the Examiner's interpretation of "seat element" as referring to one part that rests against another part.

Anticipation by Saikalis

Saikalis's fuel injector nozzle end has a fuel swirl plate A disposed successively along the fuel flow path and upstream of an air swirl plate B (Facts 5, 7). Fuel is metered into and then swirled as it passes through fuel swirl plate A (Fact 6). The fuel then passes into a chamber in air swirl plate B where it is broken up into fine particles and then ejected through a spray discharge opening (Fact 7). The downstream-facing underside of fuel swirl plate A is seated on the upstream-facing upper side of air swirl plate B, such that air swirl plate B is a seat element (Facts 8, 9). Thus, air swirl plate B is a seat element having at least one spray discharge opening, and fuel swirl plate A is a swirl element arranged upstream from the seat element, as called for in claim 19. As such, we affirm the rejection of claim 19 as being anticipated by Saikalis. Claims 20, 28-30, 32, 33, 35, 36, and 39 fall with claim 19.

Obviousness over Saikalis

As Appellants rely on the same arguments made for patentability of claim 19 over Saikalis to argue against the obviousness of the remaining dependent claims over Saikalis, and finding those arguments unpersuasive for the reasons provided *supra*, we affirm the rejection of claims 21-26, 31,

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34, 37, 38, 40, and 41 under 35 U.S.C. § 103(a) as being unpatentable over Saikalis.

CONCLUSION

Saikalis's air swirl plate B, located downstream of the fuel swirl plate A, contains a "seat element" as called for in claim 19.

DECISION

The decision of the Examiner to reject claims 19-26 and 28-41 is AFFIRMED.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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